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## FOOD PRODUCT SCALE-BASED INCENTIVE SYSTEM

### TECHNICAL FIELD

[0001] The present invention relates generally to in-store scales utilized for weighing food products and printing labels that are applied to weighed products, and more particularly, to a scale-based incentive system providing an incentive or incentives that are automatically cleared at checkout and to a scale-based incentive system providing multiple incentives in connection with a single item for increasing marketing and promotional opportunities.

### BACKGROUND

[0002] As demonstrated by U.S. Patent No. 5,578,797, it is known to provide food product scales capable of printing labels having a coupon part with a coupon bar code thereon. Such scales and related coupon systems have generally provided a single incentive in connection with a given weighed product, and therefore such systems are relatively limited. Such systems also typically require the presentation of a coupon by the customer during checkout.

[0003] Accordingly, it would be desirable and advantageous to provide a more advanced scale-based incentive system to provide more incentive options to supermarkets and groceries, their customers and the companies that distribute products in such supermarkets and groceries.

[0004] European Patent Publication No. EP 1,197,892 A1 describes various features of coupon/incentive systems.

### SUMMARY

[0005] In one aspect, an incentive system within a store for providing at least one incentive in relation to an item purchased includes a scale located in a department of the store. The scale includes a weighing device for producing weight indicative signals, at least one label printing mechanism for printing labels, and an input device for inputting product identifying information for weighed products. The scale is adapted for operation in at least one mode in which, in connection with a weighing operation of an item: (i) a weight

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dependent price is established for the weighed item and the weight dependent price is printed on a product label along with a product code; and (ii) incentive identifying information is printed for at least one incentive items based upon the weighed item, where the incentive item is different than the weighed item. A computerized checkout system is provided for determining a total price due for a given customer transaction involving a plurality of products, and includes a product code reader for reading product codes. The computerized checkout system automatically applies an appropriate price adjustment when a customer presents both the weighed item and the incentive item at checkout as determined by reading of both the product code for the weighed item and a product code for the incentive item.

[0006] In another aspect, an incentive system within a store for providing multiple possible incentives in relation to an item purchased includes a scale located in a perishables department of the store and a computerized checkout system for determining a total price due for a given customer transaction involving a plurality of products. The scale includes a weighing device for producing weight indicative signals and at least one label printing mechanism for printing labels. The scale is adapted for operation in at least one mode in which, in connection with a weighing operation of an item: (i) a price for the weighed item is established and printed on a product label along with a product identifier and (ii) incentive identifying information is printed for a plurality of incentive items based upon the weighed item, where the plurality of incentive items are different than the weighed item. The computerized checkout system includes a product identifier input device for inputting product identifiers. The computerized checkout system automatically applies an appropriate price adjustment when a customer presents both the weighed item and at least one of the incentive items at checkout as determined by input of both the product identifier for the weighed item and a product identifier for the at least one incentive item.

[0007] In a further aspect, an incentive system within a store for providing at least one incentive in relation to an item purchased includes a packaged, random weight food product having at least one adhesive label applied thereto including price information and a

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store-selected product code thereon. The at least one label further includes at least one incentive code free incentive printed thereon, where the incentive is for an incentive item that is different than the food product. A computerized checkout system is provided for determining a total price due for a given customer transaction involving a plurality of products, and includes a product code input device for inputting product codes. The computerized checkout system automatically applies an appropriate price adjustment when a customer presents both the packaged, random weight food product and the incentive item at checkout as determined by input of both the store-selected product code for the packaged, random weight food product and a product code for the incentive item.

[0008] In still another aspect, an incentive system within a store for providing multiple incentives in relation to an item purchased includes a scale located in a perishables department of the store, the scale including a weighing device for producing weight indicative signals, and at least one label printing mechanism for printing labels. The scale is adapted for operation in at least one mode in which, in connection with a weighing operation of an item: (i) a price for the weighed item is established and printed on a product label along with a product code, (ii) incentive identifying information is printed for a plurality of incentive items based upon the weighed item along with an incentive code, where the plurality of incentive items are different than the weighed item. A computerized checkout system is provided for determining a total price due for a given customer transaction involving a plurality of products, the computerized checkout system including a code reader for reading product codes and incentive codes. The computerized checkout system applies an appropriate price adjustment when each of (i) the weighed item product code, (ii) a product code of at least one of the incentive items and (iii) the incentive code are read by the code reader during a customer checkout transaction, where the computerized checkout system utilizes the incentive code to identify the plurality of incentive items and to determine which of the plurality of incentive items was included in the customer checkout transaction.

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[0009] In yet a further aspect, an incentive system within a store for providing multiple possible incentives in relation to an item purchased includes a packaged, random weight food product having at least one adhesive label applied thereto including price information and a store-selected product code thereon, the at least one label further including multiple incentives thereon, each for a respective incentive item that is different than the food product, and an incentive code thereon. A computerized checkout system is provided for determining a total price due for a given customer transaction involving a plurality of products, the computerized checkout system having access to an incentive database that links the incentive code to the multiple incentive items.

[0010] In still another aspect, a random weight item pricing scale includes a weighing device for producing weight indicative signals, at least one label printing mechanism for printing labels, and an input device for inputting product identifying information for weighed products. The scale is adapted for operation in at least one mode in which, in connection with a weighing operation of an item: (i) a weight dependent price is established for the weighed item and the weight dependent price is printed on a product label along with a product code; (ii) a database is accessed, the database linking a plurality of incentive items to the weighed item, where the plurality of incentive items are different than the weighed item and (iii) incentive identifying information is printed for the plurality of incentive items based upon the weighed item.

#### BRIEF DESCRIPTION OF THE DRAWINGS

- [0011] Fig. 1 is a schematic depiction of a food product scale;
- [0012] Fig. 2 is a plan view of an exemplary store;
- [0013] Fig. 3 is a schematic depiction of a computerized checkout system;
- [0014] Fig. 4 is a schematic depiction of a scale-based incentive system;
- [0015] Fig. 5 illustrates a packaged, random weight product with label or labels; and
- [0016] Fig. 6 is a schematic of a scale include an RF component.

#### DESCRIPTION

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[0017] Referring to Fig. 1, a scale 10 is shown schematically and includes an associated weighing station 12 having a load cell or other known weighing mechanism or device to produce weight indicative signals that are passed to a controller 14. A user input device 16 (such as a keypad, a touch sensitive display, a scanner, etc) is also connected to the controller 14. The user input device 16 may be utilized by store personnel (or in the case of a self service situation the customer) to identify the product being weighed, usually by a PLU (price look-up) number. Item identifiers for products being weighed may take other forms as well. For example, the input device could comprise a large number of keys, one for each product that might be weighed. The controller 14 refers to a price database (stored in suitable memory of the controller or accessible via a link through communications interface 18 to another computer system) to identify the price per unit weight linked to the entered PLU or other product identifier, and calculates a total price for the product based upon the weight as indicated by the weight indicative signals received from the weighing station 12. The controller 14 then establishes product print data (such as total price, price per unit weight, product bar code, logos or other image data, label set-up and format) to be delivered to a printing mechanism 20. The printing mechanism 20 includes a print head 22 and associated supply of adhesive labels 24 to be applied to products once the product print data is printed on a label ("product label") and the product label is output. The print head may be a thermal print head, with the labels including a thermally activated layer. However, it is recognized that other print head types and corresponding label types could be used. The adhesive side of the labels may be entirely or partially coated with adhesive, and the labels may be formed of any suitable material. The scale also includes a display 26 for displaying information, such as weight and price of the item being weighed.

[0018] In another embodiment, the scale may also include another display 28, with display 26 set up to face an operator side of the scale and with the other display 28 set up to face a customer side of the scale. The inclusion of another printing mechanism 30 is also

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possible, with the printing mechanism 30 including an associated print head 32 and supply of media 34, which media 34 may be label media or non-label media.

[0019] The various components of the scale 10 could be integrated into a single housing or unit. Alternatively, the scale 10 may be formed of components formed as separate units and connected together for communication with each other, in which case the controller may be a distributed controller, with various control functions distributed among the components. As used herein the terminology “controller” is intended to encompass the distributed controller configuration. Further, the term “controller” is intended to broadly encompass the collection of circuits, processors and other components that carry out the various operating and processing functions of the scale and its component parts.

[0020] Referring now to Fig. 2, the scale 10 may be located within a store 40 having a point of sale 42 with an associated computerized checkout system, typically including plurality of check out lanes, each with a corresponding bar code scanner, cash register and electronic payment terminal (as used for paying by credit card or debit card). The scale 10 is preferably located at another location, such as a perishables department as represented by the fruit and vegetable department 44, the meat and fish department 46 or associated back room 48, or the deli department 50 so that incentives can be provided to customers prior to the actual purchase of any products and prior to the customer being on the way out of the store.

[0021] A schematic of a computerized checkout system 60 for determining a total price due for a given customer transaction involving a plurality of products is shown in Fig. 3, illustrating multiple cash register 62, bar code scanner 64 and payment terminal 66 combinations. Connections are provided to a point-of-sale computer 68 that includes one or more databases for storing pricing information for the products located in the store, as well as other information needed at checkout, such as one or more coupon databases. As illustrated in Fig. 4, each of the scale 10 and the point-of-sale computer 68 may be connected for communication with an in-store computer system, via respective communication links 72 and 74, enabling the store computer system to be used to modify databases stored in either the

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scale 10 or the point-of-sale computer system, or enabling the scale 10 or point-of-sale computer system to access information on the store computer system 70 on a real time basis, such as during weighing of an item by the scale 10 or during a customer checkout transaction at the point-of-sale. The scale 10 and point-of-sale computer 68 may also be connected for communication with each other via communication link 76. Each of the scale 10, point-of-sale computer 68 and store computer system 70 may be connected (e.g., by communications links 78, 80 and 82) to enable communication with one or more remote computer systems 84, such as a store chain's regional computer system, a credit or debit verification computer system, or a service provider's computer system (e.g., enabling a service provider for the scale to download data and programs directly to the scale 10).

[0022] In one implementation, appropriate programming and configuration of the scale 10 and the computerized checkout system 60 provides an incentive system within a store 40 for providing multiple incentives in relation to an item purchased. In particular, a scale 10 located in a perishables department 44, 46, 48 or 50 of the store, is adapted for operation in at least one mode in which, in connection with a weighing operation of an item: (i) a weight dependent price is established for the weighed item and the weight dependent price is printed on a product label along with a product code (such as a bar code or part of a bar code); and (ii) incentive identifying information is printed for a plurality of incentive items based upon the weighed item, where the plurality of incentive items are different than the weighed item. In practice, the scale operator inputs a product code, typically referred to as a PLU (price look-up) number, for the item being weighed. The PLU is considered "store-selected" because different store chains can use different PLU numbers for the same items. In other words, there is no mandated standard for the PLU number across all chains in the United States. The scale 10 uses the PLU number to access a pricing database (internal or remote) for use in establishing the price of the weighed item. The scale 10 also uses the PLU number to access an incentive database (again internal or remote) to identify any incentives associated with or linked to the weighed item. Where one or more incentives are

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associated with the weighed item, the scale prints the incentive information. In this implementation the incentive information is preferably "incentive code free," meaning that the incentive information does not include a coupon bar code or other incentive specific code that needs to be input during checkout. The information can be printed on part of the product label, on a label separate from the product label (i.e., an incentive label), or on non-label media (on an incentive ticket) in the case of the a scale 10 including a second printer 30 with non-label media. Regardless of where the incentive information for the incentive or incentives is printed, the incentive information is communicated to the customer by providing the product label, incentive label or incentive ticket to the customer (either separately or applied to the weighed product). The customer can then retrieve one or more of the incentive items from their respective locations within the store. When the customer presents both the weighed item and one or more of the incentive items at the point-of-sale during checkout, the computerized checkout system 60 automatically applies an appropriate price adjustment without requiring the customer to physically present a "coupon" during checkout. In particular, when both the product code for the weighed item and a product code (such as a UPC bar code) for an incentive item is read at checkout during a transaction, the point-of sale computer 68 automatically applies the adjustment (e.g., a discount or other price reduction corresponding to the incentive). In one example, after all of a customers products have been presented at checkout, the point-of-sale computer may automatically scan for various product combinations as may be stored in an incentive database (e.g., a database associating each incentive item with the weighed item) and when a matching combination is found, the computer 68 applies an appropriate price adjustment as is also reflected in the incentive database. In another example, the point of sale computer 68 may only look for product combinations when triggered to do so by reading of the product code for the weighed item. In the latter case the price adjustment may be made before all of the customer's products have been presented at checkout. In either case, the price adjustment is considered "immediate" if the price adjustment is somehow reflected in the customer's current checkout transaction



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total. Where multiple incentives are associated with the weighed item and printed by the scale, and the customer presents a multiplicity of the incentive items at checkout, the computerized checkout system implements appropriate price adjustments for each of the incentive items, enabling a customer to maximize savings.

[0023] The foregoing incentive system implementation is advantageous for customers because it can provide them with multiple incentive options based upon the selection of a particular weighed item, and the customer does not need to remember to physically hand any coupon to the checkout person. The implementation is advantageous for the store because it invites customers to increase the number of products purchased during a given store visit. The implementation is advantageous for product manufacturers because it enables them to market one or more different products in connection with a single weighed item.

[0024] In the foregoing implementation, or where the weighed item is packaged, labeled and set out for customer selection, as might typically be done in the meat and fish department 46, a resulting incentive system includes a packaged, random weight food product 100 (Fig. 5) in combination with the above-described an configured computerized checkout system. The packaged, random weighed food product 100 has an adhesive label 102 applied thereto including a first label part 104 with price information 106 and a store-selected product code 108 printed thereon. The label 102 includes a second label part 110 with one or more incentive code free incentives 112 printed thereon, each for a respective incentive item that is different than the food product. A separation line 114 may separate the two parts 104 and 110, and part 110 may be removable from the package by tearing along the line 114. Alternatively, label part 104 may be formed as a first label that is separate from label part 110 formed as a second label 110'. In a typical example the store-selected product code 108 is part of a random weight universal product code (as a bar code) that defines a number taking the following format:

2 (I) I I I I (C) P P P P C ,

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where the first digit as a 2 identifies the UPC as being a random weight type, where the second four or five digits "I" are set up as the product code, where the "C" digits are used as check digits, and where the four "P" digits are used for the price of the weighed item. The product code set up by the "I" digits may be the same as the PLU number or may be different.

In either case, the product code is considered a "store-selected product code" because different store chains can use different numbers for the same items. In other words, for a given product, there is no mandated standard across all chains in the United States for the product code set up by the "I" digits. This situation is in contrast to the product codes used for most items in the store, where the product manufacturer/packager applies the product code/bar code and it is the same across all stores and store chains per the current UPC bar code system.

[0025] In another implementation, appropriate programming and configuration of the scale 10 and the computerized checkout system 60 provides a slightly different incentive system within a store 40 for providing multiple incentives in relation to an item purchased. In particular, the scale 10 located in a perishables department of the store is adapted for operation in at least one mode in which, in connection with a weighing operation of an item: (i) a price for the weighed item is established and printed on a product label along with a product code (such as a bar code or part of a bar code), (ii) incentive identifying information is printed for a plurality of incentive items based upon the weighed item along with a single incentive code (such as a bar code or part of a bar code) that is linked to the plurality of incentive items, where the plurality of incentive items are different than the weighed item. The computerized checkout system applies an appropriate price adjustment when each of (i) a product code of at least one of the incentive items and (ii) the incentive code are read by the code reader during a customer checkout transaction. In particular, the computerized checkout system utilizes the incentive code to identify (as from an incentive database) the plurality of incentive items and to then determine which of the plurality of incentive items was included in the customer checkout transaction. Such an incentive system uniquely ties multiple

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different incentive items to a single incentive code. In an alternative example of this incentive system, the computerized checkout system 60 may be configured to also require that the weighed item product code be read during the checkout transaction in order for price adjustments for the incentive items to be made, in which case an incentive database would also link the weighed item to the incentive code.

[0026] While the foregoing describes several preferred implementations of an incentive system, it is recognized that variations are possible. In particular, while the primary form of product identifier or product code applied to weighed products is incorporated into the commonly used bar code and the primary form of product identifier or product code input device is a bar code scanner, other types of product codes and input devices could be used. For example, the product identifier or code printed on labels for weighed items could be a simple visual number and the product identifier or code input device could be a keypad used by checkout personnel to manually input the number. The same holds true for incentive codes when used. As another example, future technologies may enable printing of other types of scannable or otherwise detectable codes to be used with corresponding scanning or detection technologies.

[0027] As a further example, the development of labels incorporating RFID tags that store information (either read only or read/write) is contemplated. Referring to Fig. 6, an exemplary scale incorporating a supply of labels 24' (or possibly some non-label media) including respective RFID tags is shown, and includes an additional component in the form of an RF unit 200. In one embodiment each and every label includes a pre-attached RFID tag. In another embodiment the scale includes a mechanism for selectively attaching RFID tags to certain labels as needed. In a further embodiment the scale includes a mechanism for attaching the RFID tag to the package separate from the product label that is printed.

[0028] In the case of labels incorporating passive, read only RFID tags it is contemplated that each tag would be pre-configured to store a distinct number and the RF unit 200 would take the form of an RF reading mechanism that outputs a localized RF

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detection field in the vicinity of the labels as they exit the scale, in order to read the number from the RFID tag of each label that is printed. The scale would then associate the number of the read RFID tag with the weighed product (e.g., type (e.g., PLU number), weight and price) and make that information available to the computerized checkout system (e.g., by sending the information to an appropriate database), where the checkout system would include an RF reading unit (in place of or in addition to the bar code scanner) to read the number from the RFID tag of the weighed item when presented at checkout. The checkout system would then access a database according to the read RFID number to identify the product and its price for transaction totaling purposes. In this type of system, when one or more incentives are associated with the product that is weighed by the scale, the incentive information can also be accessed by the computerized checkout system once it identifies the product type. The computerized checkout system can then determine whether any of the incentive products are also presented at checkout in order to automatically apply price adjustments as previously described, without requiring the customer to present any coupon. In another embodiment, where a separate incentive label or ticket is presented to the customer and it identifies multiple incentives, the scale may automatically link the unique number of the RFID tag of such incentive label or ticket to the multiple incentives, and make that information available to the computerized checkout system, so that the incentive label or ticket can be presented by the customer at checkout in a coupon type fashion.

[0029] In the case of labels incorporating read/write RFID tags it is contemplated that the RF unit 200 would take the form of an RF read/write unit to write information (e.g., type (e.g., PLU number), weight and price) to the RFID tag, where the checkout system would include an RF reading unit to read the information from the RFID tag of the weighed item when presented at checkout. In this type of system, when one or more incentives are associated with the product that is weighed by the scale, that information can be accessed by the computerized checkout system once it identifies the product type by reading the RFID tag. Alternatively, the scale may write all incentive information to the RFID tag (of the

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product label or a separate incentive label or ticket) or may write an incentive code to the RFID tag (of the product label or a separate incentive label or ticket) where the incentive code is used by the computerized checkout system to access incentive information, so that the incentive label or ticket can be presented by the customer at checkout in a coupon type fashion.

[0030] It is recognized that numerous other variations exist, including both narrowing and broadening variations of the above-described embodiments and examples.

[0031] What is claimed is: